

Translation

PATENT COOPERATION TREATY

PCT/DE2003/000672



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference W1.1917PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DE2003/000672	International filing date (day/month/year) 28 February 2003 (28.02.2003)	Priority date (day/month/year) 13 April 2002 (13.04.2002)
International Patent Classification (IPC) or national classification and IPC B65H 9/10, B65H9/10		
Applicant KOENIG & BAUER AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 10 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 8 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 11 November 2003 (11.11.2003)	Date of completion of this report 29 April 2004 (29.04.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

☐ the international application as originally filed.

☒ the description, pages _____, as originally filed,
 pages 2, 4-13, filed with the demand,
 pages 3, filed with the letter of 02 April 2004 (02.04.2004),
 pages 1, 3a, filed with the letter of 16 April 2004 (16.04.2004).

☒ the claims, Nos. _____, as originally filed,
 Nos. _____, as amended under Article 19,
 Nos. _____, filed with the demand,
 Nos. 1-23, filed with the letter of 16 April 2004 (16.04.2004),
 Nos. _____, filed with the letter of _____.

☒ the drawings, sheets/fig 1/5-5/5, as originally filed,
 sheets/fig _____, filed with the demand,
 sheets/fig _____, filed with the letter of _____,
 sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

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IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☒ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. _____

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: **BOX IV.3****Lack of unity of invention**

The International Examining Authority considers that the requirements regarding unity of invention as described in the PCT Regulations are not met by the present application for the following reasons:

1. First invention

Document D1 discloses (figures 1-4):

a device for aligning sheets transversely to their direction of transport, retaining means which transport a sheet from above being arranged so as to move the sheet against a side guide, and at least two sheets overlapping in the direction of transport of the sheets, an effective retaining surface which is longer in the longitudinal direction than in the transverse direction extending in the direction of transport of the sheets, and three sheets being simultaneously located in the area of the retaining means (cf. claim 1, partially);

and

a method for aligning sheets transversely to their direction of transport, in which retaining means which transport a sheet from above are arranged so as to move the sheet against a side guide, and a plurality of sheets overlap in the direction of

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: BOX IV.3

transport of the sheets, the method having the following steps:

- a sheet held from above is moved by retaining means transversely to the direction of transport of the sheets;
- at the same time, a leading end of the following sheet is transported below the sheet held from above, into the area of the retaining means (cf. claim 23, partially).

Consequently, a first invention is seen in the following special technical features of the device claim 1 and the corresponding method claim 23:

- the retaining means is designed as at least one suction roller, one longitudinal axis of the suction roller extending approximately in the direction of transport of the sheets, and the suction roller is arranged so as to rotate (cf. claim 1, partially);
- the retaining means is a suction roller, one longitudinal axis of the suction roller extending approximately in the direction of transport of the sheets, and at least one trailing edge, in the direction of transport of the sheets, of an already aligned sheet moved in the direction of transport of the sheets, is moved again transversely to the direction of the sheets, away from the side guide (cf. claim 23, partially).

These special technical features can be seen to

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: BOX IV.3

make the following contribution over the prior art:
to solve the objective problem of providing an
alternative retaining means for gripping the sheets
from above without a clamping effect, in a known
device for aligning sheets transversely to the
direction of transport of the sheets, and in which
three sheets are simultaneously located in the area
of the retaining means.

2. Second invention

Document D4 discloses (figure 3) a device for
aligning sheets transversely to their direction of
transport, a suction roller for transporting a
sheet being arranged so as to move the sheet
against a side guide (cf. claim 3 and claim 4,
partially).

Consequently, the following special technical
features of claims 3 and 4 are considered to
pertain to a second invention:

- the suction roller is arranged so as to make half
a turn per sheet to be aligned (cf. claim 3);
- the suction roller comprises a plurality of
segments with suction holes in the
circumferential direction, each segment
aspirating another sheet to be aligned (cf. claim
4).

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: BOX IV.3

These special technical features can be considered to make the following contribution over the prior art: to solve the problem of providing an alternative, simplified arrangement of the known suction roller, with an optimised motion sequence of the roller.

3. There is obviously no technical relationship between the problem addressed or the solution proposed by the various technical features defined in points 1 and 2 above.

The requirement for unity of invention, as defined in PCT Rule 13.1, is therefore not met, and the application contains several subjects which are not linked by a single inventive concept.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-23	YES
	Claims		NO
Inventive step (IS)	Claims	1-23	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-23	YES
	Claims		NO

2. Citations and explanations

This report makes reference to the following documents:

- D1: US-A-2 167 823 (TOWNSEND BACKHOUSE HEADLEY) 1 August 1939 (1939-08-01)
- D2: DE 27 17 554 A (POLYGRAPH LEIPZIG) 24 August 1978 (1978-08-24)
- D3: DE 653 308 C (E H GEORG SPIESS DR ING) 23 November 1937 (1937-11-23)
- D4: DE 11 10 656 B (NACHF HENSE & PLEINES GMBH; MABEG MASCHB GMBH) 13 July 1961 (1961-07-13) mentioned in the application
- D5: US-A-1 728 329 (BROADMEYER) 21 September 1927 (1927-09-21)
- D6: DE 198 22 307 A (HEIDELBERGER) 14 January 1999 (1999-01-14)

1. First invention: device claim 1 and method claim 23

1.1 The closest prior art document (D1) discloses (figures 1-4)

a device for aligning sheets transversely to their direction of transport, a retaining means which transports a sheet from above being arranged so as

to move the sheet against a side guide, at least two sheets overlapping in the direction of transport of the sheets, an effective retaining surface which is longer in the longitudinal direction than in the transverse direction extending in the direction of transport of the sheets, and three sheets being simultaneously located in the area of the retaining means (cf. claim 1, partially);

and

a method for aligning sheets transversely to their direction of transport, in which retaining means which transport a sheet are arranged so as to move the sheet against a side guide, and a plurality of sheets overlap in the direction of transport of the sheets, the method having the following steps:

- a sheet held from above is moved by retaining means transversely to the direction of transport of the sheets;
- at the same time, a leading edge of the following sheet is transported below the sheet held from above, into the area of the retaining means (cf. claim 23, partially).

1.2 The objective problem addressed by the first invention in claims 1 and 23 is that of providing an alternative retaining means for gripping the sheets from above, without a clamping effect, in a device and corresponding method for aligning sheets transversely to their direction of transport, three sheets being simultaneously located in the area of the retaining means.

1.3 This problem is solved by the device claim 1 in that

- the retaining means is designed as at least one suction roller, one longitudinal axis of the suction roller extending approximately in the direction of transport of the sheets, and the suction roller being arranged so as to rotate.

This combination of features is neither known from nor suggested by the available prior art.

Although it is known to use suction rollers instead of the rotary tables or vacuum grippers of D1 for laterally aligning sheets, the suction rollers in D4 are not rotary (irregular movement), in D5 they are not arranged from above and along the direction of transport (poor transport properties), and in D6 they are not arranged from above, so that they do not suggest the subject matter of claim 1. Claim 1 therefore meets the requirements of PCT Article 33(1).

1.4 This problem is solved in the method claim 23 in that

- the retaining means is a suction roller, one longitudinal axis of the suction roller extending approximately in the direction of transport of the sheets and at least one trailing edge, in the direction of transport of the sheets, of an already aligned sheet moved transversely to the direction of the sheets, is moved again transversely to the direction of transport of the sheets, away from the side guide (cf. claim 23,

partially).

Although the prior art (D2 and D3) describe the step which consists in moving a trailing edge, seen in the direction of transport of the sheets, of an already aligned sheet moved transversely to the direction of transport of the sheets, again transversely to the direction of transport of the sheets, away from the side guide, it does not describe or suggest its combination with a suction roller acting from above. Claim 23 therefore meets the requirements of PCT Article 33(1).

2. Second invention: device claims 3 and 4

- 2.1 The closest prior art document (D4) discloses (figure 3) a device for aligning a sheet transversely to the direction of transport of the sheets, a suction roller that transports a sheet being arranged so as to move the sheet against a side guide (cf. claim 3 and claim 4, partially).
- 2.2 The problem addressed by the second invention in claims 3 and 4 is that of providing an alternative, simplified arrangement of the known suction roller, with an optimised motion sequence of the roller.
- 2.3 This problem is solved in that:
- the suction roller is designed to make half a turn per sheet to be aligned (cf. claim 3);
 - the suction roller has a plurality of segments with suction holes in the circumferential direction, each segment aspirating another sheet

to be aligned (cf. claim 4).

This combination of features is neither known from nor suggested by the available prior art.

3. Dependent claims 2 and 5-22 relate to developments of independent claims 1, 3 and 4. They therefore likewise meet the requirements of PCT Article 33(1).